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☞See advertisement on last page.

Poetry.

THE WIFE TO HER HUSBAND.

" You took me, William, when a girl,
Unto your home and heart,
To bear in all your after-fate
A fond and faithful part ;
And tell me, have I ever tried
That duty to forego,
Or pined there was not joy for me,
When you were sunk in woe ?
No ; I would rather share your tear
Than any other's glee,
For though your nothing to the world,
You're all the world to me.

You make a palace of my shed,
This rough-hewn bench a throne ;
There's sunlight for me in your smiles,
And music in your tone.
I look upon you when you sleep—
My eyes with tears grow dim,
I cry, " O parent of the poor,
Look down from heaven on him :
Behold him toil from day to day,
Exhausting strength and soul ;
Oh look with mercy on him Lord,
For thou cans't make him whole !"

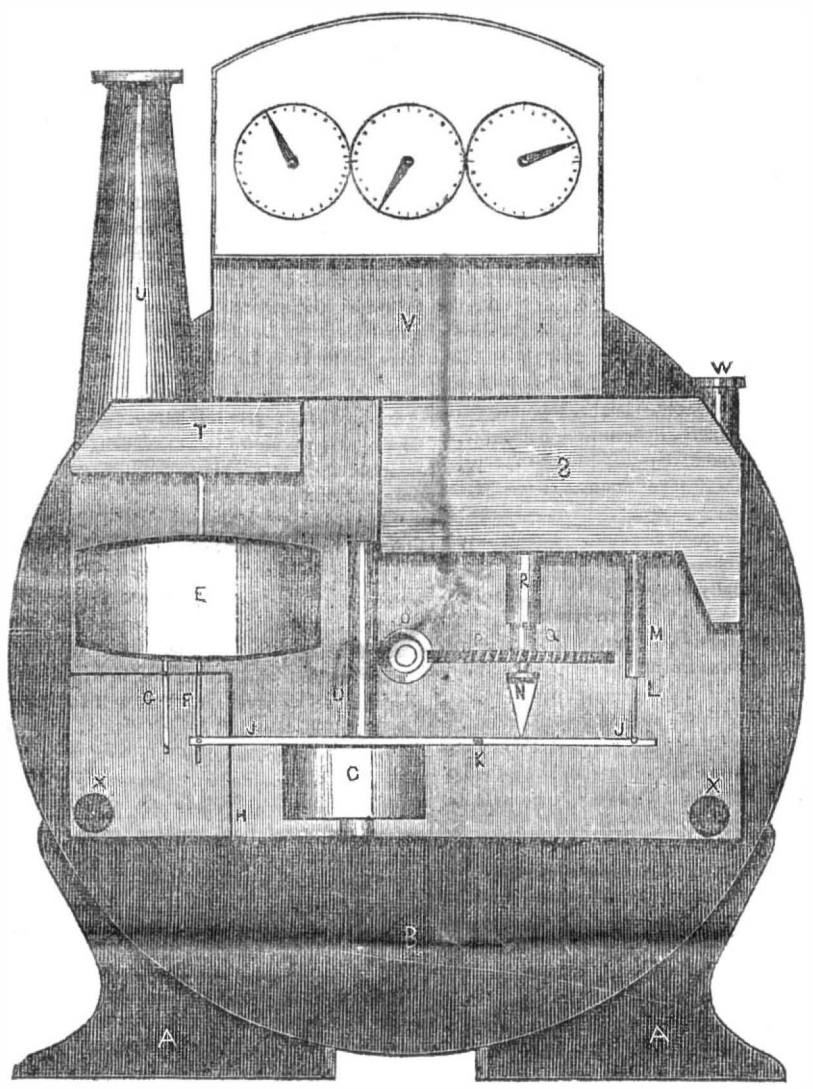
And when at last relieving sleep
Has on my eyelids smiled,
How oft are they forbade to close
In slumber by our child ?
I take the little murmurer
That spoils my span of rest,
And feel it is a part of thee,
I lull it on my breast.
There's only one return I crave,
I may not need thee long,
And it may soothe thee when I'm where
The wretched feel no wrong.

I ask not for a kinder tone,
For thou wert ever kind,
I ask not for less frugal fare,
My fare I do not mind ;
I ask not for attire more gay—
If such as I have got,
Suffice to make me fair to thee,
For more I murmur not.
But I would ask some share of hours
That you on clubs bestow,
Of knowledge which you prize so much,
Might I not something know ?

Subtract from meetings among men
Each eve an hour for me ;
Make me companion of your soul
As I may safely be.
If you will read, I'll set and *work* ;
Then *think* when you're away ;
Less tedious I shall find the time,
Dear William, of your stay.
A meet companion soon I'll be
For e'en your studious hours,
And teacher of those little ones
You call your cottage flowers ;
And if we be not rich and great,
We may be wise and kind,
And as my heart can warm your heart,
So may my mind your mind."

It is not our interest always to be over-rigorous in the demanding of our rights.—Nothing looks better than for a man sometimes to drop part of his pretensions.

ALFRED MARSH'S IMPROVED GAS METER.



This invention is that of Mr. A. Marsh, No. 87 Ninth Avenue, this city, whose long experience in the construction of gas apparatus insures confidence in its originality and usefulness. It is well known that there is both trouble and expense incurred to the maker and consumer of gas by the wet meters at present in use, owing to the water in them getting either above or below its proper line. This metre removes that evil. It is self acting and the water-float that admits the gas is connected with a water supply reservoir so as to work in unison and be a self-feeder and correct governor.

A A, is the base of the meter B, is a hollow drum, in the inside of which there is a wheel that is operated by the gas which works a screw spindle communicating motion to clockwork in V, which is registered on the dials, according to the quantity of gas admitted into the meter. The quantity of gas admitted into the meter is regulated by a float E, which is floated by water admitted into the meter to fill a little more than half of it. When the float is up the gas which is admitted to the chamber through U, comes into the meter through a hole in the bottom of a small chamber T, and that hole is opened or closed by the spindle of E, on the end of which is a valve to fit the said hole. The float there regulates the quantity of gas admitted. Before the gas gets to the consumer, it has to pass into the hollow drum and operate the wheel which turns the clock work or registering machinery. The gas therefore goes down D, an open tube, and escapes into the drum through a tube a little above and behind the dry well C. When the wheel inside of the drum revolves, it meshes by its screw O into a cog wheel P, and by its upright spindle Q, which passes through R, a tube, thus turns the registering work.—The water that keeps up the float is admitted through W, into S, a reservoir, and comes down into the meter through the tube M. L, is a spindle attached to a valve inside of S, the same as the one inside of T, and this is connected to the float by J J, a lever rod, and a spindle F. K, is the pivot of the lever rod. It will therefore be observed that when E, the float, is at its proper height of water line, the supply from the reservoir is shut off, and as it may fall so by their connection water will be admitted to raise the float to its proper line.—This is the self-acting and harmonious governing improvement. X X, are orifices to admit the water to its proper line in the drum G, is a guide rod of the float working in an eye in a broad piece of metal indicated by the dark line and standard H. N, the gudgeon of the clock work shaft, is secured to the side of the meter and does not rest upon the lever J J. It is no easy matter to explain or construct a gas meter, but those who are acquainted with meters will perceive those improvements for which the inventor has taken measures to secure a patent and those who are not acquainted with gas meters, we think will get as good if not a better idea of their principles and construction from this brief description than from any work we are acquainted with.

Much of the country to the northward of the Island of Montreal, especially about St. Eustache, hat been completely devastated by the caterpillars and grasshoppers. In some parts they have effected a hideous destruction.

Sulphur, selenium, phosphorus and arsenic are known to exist in two, if not three, of certain allotropic states, to which must be referred the marked characteristics of many of their compounds.

RAIL ROAD NEWS.

Worcester and Nashua R. Road.

The grading of the whole line from Worcester to Nashua is nearly completed, as well as most of the bridges, and the cross ties for the superstructure. The rails are laid from Clintonville in Lancaster to the crossing of the Fitchburg road in Groton, between 11 and 15 miles, and on the 3d inst. the regular trains commenced running The receipts therefrom have exceeded expectations, and are highly encouraging. A communication is thus opened by the Clintonville, by the Fitchburg road to Boston, and by the Stony Brook Road which was opened the 1st of July, to Lowell. Contracts have been made for Depot buildings and Engine houses, and progress made therein, but none of them finished except the Engine house at Clintonville. If the necessary funds are furnished the road may be opened from Worcester to Clintonville by the 1st of November, and through the whole line by the 1st of December.

Louisville and Frankfort Railroad.

The examinations recently made by Col. Long with a view to the selection of the most favorable route for the road above-mentioned are likely to result in the saving of seven or eight miles in distance, of about $50,000 in the cost of construction, and of at least $100-000 in the cost of transportation ; making an aggregate saving to the stockholders of the railroad and the public generally of about $150-000.

The system of road-location recommended by Col. L. as the most favorable that the ground traversed by the new route will admit of contemplates that all ascending gradients, in the direction of the lighter transports viz: from Louisville eastward, should be limited to forty-five feet per mile, and that all similar gradients in the direction of the heavier trade, viz: from Frankfort, westward, should be limited to forty feet per mile, except in the valley of Benson's creek, where the minimum gradient or rate of declivity must unavoidably be 48 or 50 feet per mile. The gradients thus restricted are more favorable than those adopted on the surveyed route, which contemplate numerous declivities in both directions, varying from 40 to 60 feet per mile.

St. Andrews and Quebec Railroad.

The accounts from England by the last steamer outstripped the most sanguine expectations—£25,000 of stock has been taken by two gentlemen in England, and the whole stock would to a certainty, be immediately taken up, and the money paid in forthwith, and the time was actually calculated in London, when this great work would reach Woodstock.

Mr. Hudson, has declared, in the House of Commons, that it will never be practicable to work the double gauge. It has been tried on six miles of the Midland line, and will, he says, never do. We shall see.

The Mining Journal states that Sir James Anderson, who has spent a fortune in experiments, has at length succeeded in perfecting a locomotive carriage for common turnpike roads An old story.

Telegraph in the West and Southwest.

Every part of the great Mississippi Valley Telegraph is now erected from Dubuque and Galena to New Orleans, from Iowa to the Gulf of Mexico. The line is about 1800 miles long, and is a portion of the Atlantic, Lake and Mississippi line telegraph range, constructed by Henry O'Reilly. The wire is now at Galena, and will be at Dubuque in a few days. The lower end of the line, from Tuscumbia and Memphis to New Orleans will soon be wired and in working order. This makes a total of 4000 miles of telegraph construction under the arrangements of Mr. O'Reilly.

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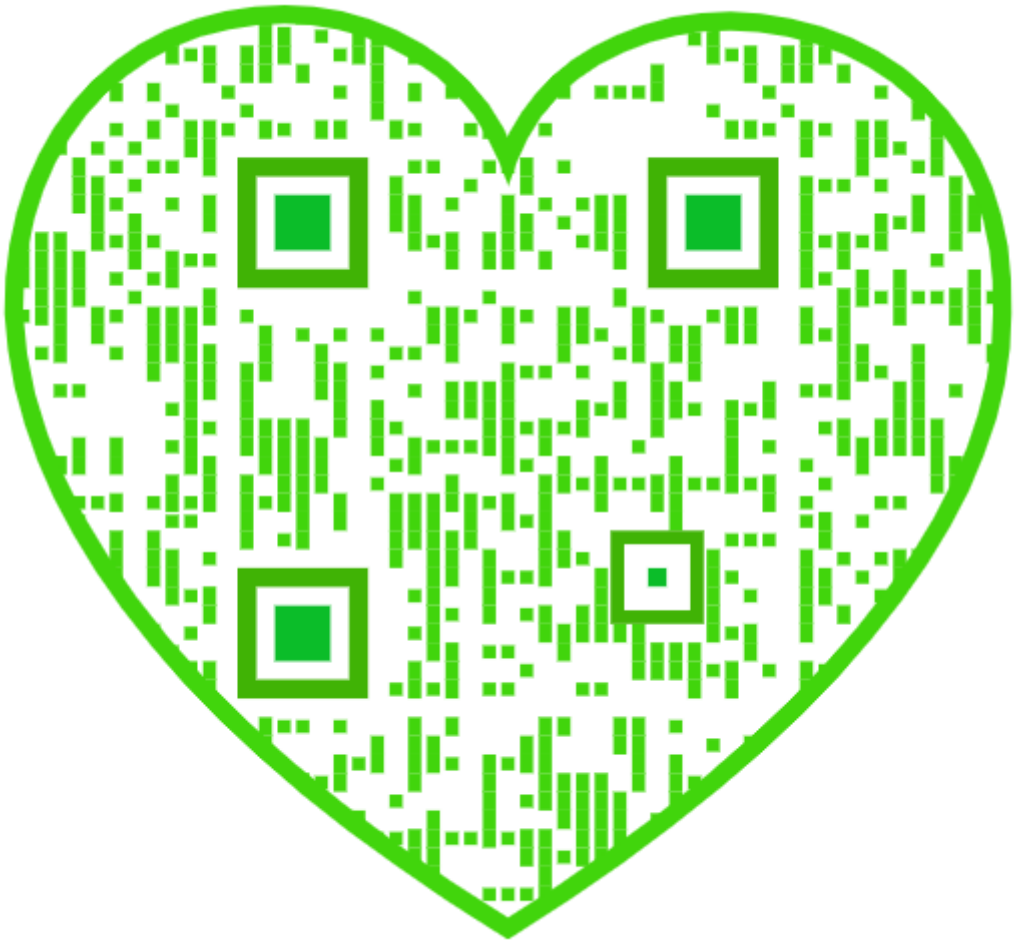

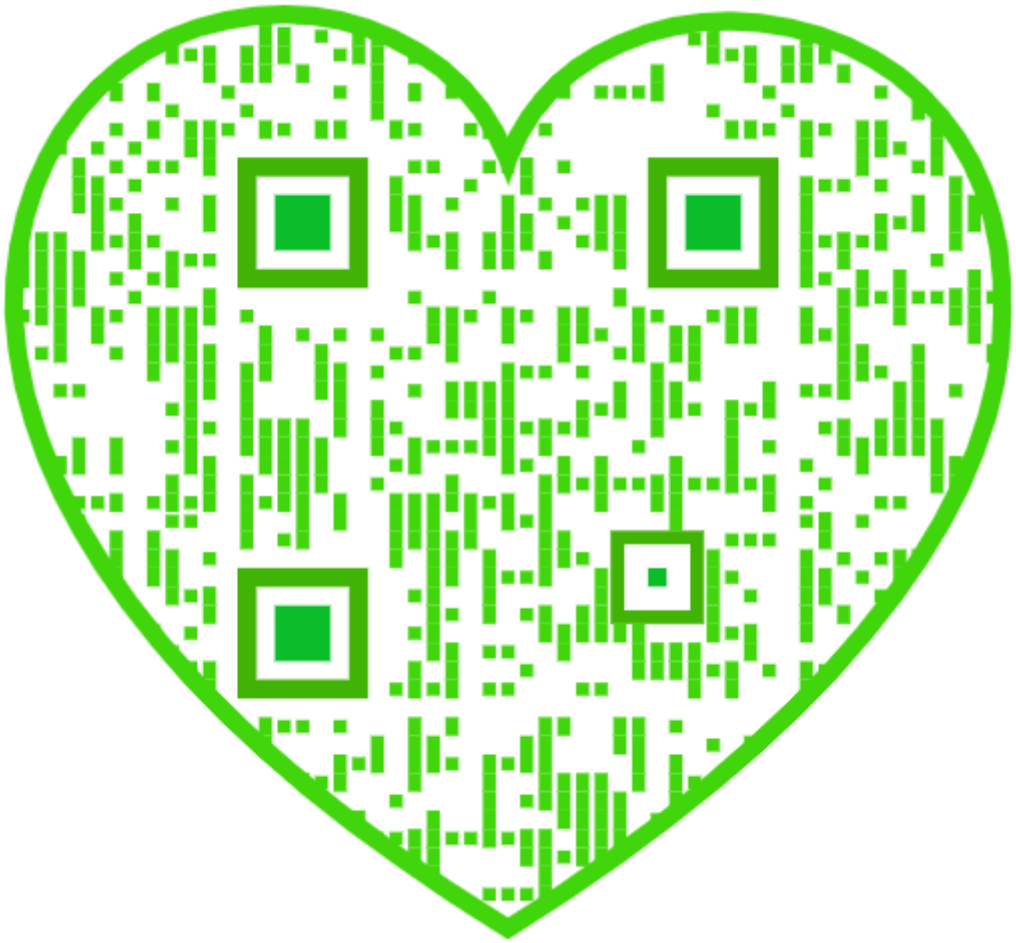

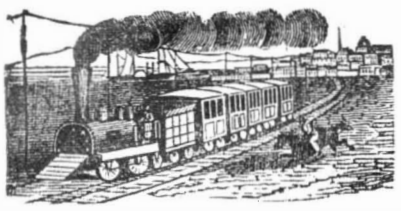

New York Western R. Road.

A few months hence we shall behold a great change in the condition and operations of the central line of railroads through this State. The heavy iron track is already complete from Albany to Utica, and in the different sections between the latter place and Buffalo, the old and nearly worn-out track is being rapidly replaced by a substantial T rail. The Auburn and Rochester Company are making strenuous exertions to complete the new structure by the middle of September of the 1st of October. About 500 men are kept constantly employed along the line, at an expense of $25,000 per month. They usually lay about seven miles of new track in a week. They could easily complete the work by the last of August, if their labors were not constantly interrupted by the passing and repassing of the cars. The Directors of the Company have ordered a new set of locomotives of the largest class, to be used on the new road, some of which have already arrived.

The Tonawanda Company have also commenced laying a new track with the heavy T rail. The foundation is very firm, while the superstructure is laid in such a manner as to prevent all shaking and jarring, so that the traveller finds himself almost as comfortably seated as on one of the North River steamboats. The new track upon this line will not be completed till next season.

The Directors have commenced laying a new track on the Attica and Buffalo line also; we expect then to have quicker travelling along these routes. At present the locomotives on these routes, go slower than our North River Steamboats.

Neutral Papers.

Now is the time, in the midst of an exciting political campaign when neutral newspapers are particularly valuable and ought to be welcome visitants to every family. They attend to the things of the busy world generally, and are free from the noise and clamor of dispute. What a compound is a political sheet during a presidential contest! Here you have a column or two of speeches by nobody knows whom, upon nobody knows what; there a column or two of gas, bagatelle and braggadocia; then a column devoted to the exposure of fibs by opponents; another to what seems to be the production of the same articles; and a large balance of party scraps, slops and dish water. We fancy that the public turn from these to a neutral paper with a genuine relish, as they would from a hot sun into a shady avenue.

Something New for Nurses.

A coppersmith in Quincy, Ills., has just patented a tea-kettle that sings the baby to sleep. By means of a little contrivance connected with the spout, a style of melody is got up that nearly equals Jenny Lind. This is a desideratum long desired, but it is not equal to the machine *down East* where they do up their things the slickest of all this 'ere broad potatoe patch. One tinsmith in Salem has made a machine which not only sings the baby to sleep but rocks the cradle, sweeps the floor, thumps the ducks and combs the tinsmith's head with a three footed *stool*.

Nine Bars of Gold,

The product of ore taken from mines in Buckingham County, Virginia, are attracting no small share of attention in that State. It is said that the mines yield $75 per day, while the expense of working them is only about $18 per day. We should call that a fair profit.

New application of Chloroform.

Mr. Nunneley, surgeon, of Leeds, England, has announced as the result of a series of experiments with ether, chloroform, and other anæsthetic agents, that by imersion in a small quantity, or by the local application of the vapor—parts of the body may be rendered insensible to pain without affecting the brain.

Fair of the American Institute.

The next FAIR of the American Institute, to open on the 3d of October, will be the Twenty-first annual exhibition of that Institution in this City.—Very extensive and complete preparations have been made for a renewed exhibition of the products of American skill and industry, and the occasion will prove, as it always has done, entertaining and instructive.

Castle Garden is again selected. Excellent accommodations will be provided for all branches of the exhibition—A *separate building* is to be erected, outside the walls, for the reception of the moving machinery. It is to be about 150 feet in length, and 25 wide —the center opposite the back-door of the Fort, and extending each way 80 feet; covering a apace of 3,476 square feet. A walk of five feet width is left between the building and the picket, and the height of the edifice will be about 12 feet, from floor to rafters.

By this arrangement, much additional room will be afforded in the Garden; and, to add to these conveniences, the interior of that building has undergone a number of improvements during the past few months, under the direction of its proprietors. The Bridge will be covered with a tight roof, and will be devoted, as usual, to carriages, sleighs, wagons, agricultural machinery, hydraulic apparatus, &c.

Five hundred dollars have been appropriated for handicraft of apprentices or minors, for the purpose of exciting emulation and improvement among ingenious youth. The premium lists are to embrace all the objects of Art and Industry usually encouraged by the Institute, and a separate list of the works will be kept —so that minors, the young ladies included, shall compete *only* with minors, and not with experienced and finished workmen.

There are also the offer of special premiums for Domestic Wool, for the best Fruits and Flowers, Farms and Gardens, and a Central Convention of Fruit Growers, to be held during the second week of the Fair.

Fair of the Maryland Institute.

The Managers of the Maryland Institute have sent us a Circular for their "first annual exhibition" to take place at Washington Hall in the City of Baltimore on Tuesday the 31st, of October next.

Medals and honorary diplomas are to be awarded as articles exhibited deserve. The managers are gentlemen whose honor and impartiality is pledged in regard to impartiality, and from them every thing is to be expected that will tend to make the Fair of the Maryland Institute, not only an honor to Baltimore, but to all America. They invite mechanics, artists, and manufacturers to exhibit he fr uits of their labor and genius in Baltimore and those who go will not be disappointed. Those who wish to know all the particulars about the Fair, will get the necessary information by addressing (post paid,) Edward Needles, Cor. Secretary of the Institute, Baltimore.

Singular Explosion.

A short time ago at a stave factory in Rochester, N. Y. a cast iron wheel 7 feet in diameter, and weighing about 800 pounds, going almost with the speed of lightning, exploded, and scattered the fragments in every direction. At the time, a boy was on each side feeding it, and fifteen men stood in different places in the immediate vicinty, and strange to say, not one of them was injured! One piece, weighing about 100 pounds, was carried through the roof, and came to the ground some fifteen rods distant, sinking some disance beneath the surface. The escape of the boys and men is remarkable.

Manufacturers Moving.

The Cotton Factory owners around Pittsburgh it is said, have appointed a Committee to seek a location somewhere on the Ohio river, in Western Virginia, not too remote from the coal region, for the purpose of building up a Western Manufacturing town for cotton and woolen goods—a sort of Western Lowell—to which it is intended to remove their machinery. The object is to avoid the frequent turn-outs which now so much embarrass their business, which they think are encouraged and fomented by the presence of the crowded population in large cities.

The Dead Sea Expedition.

The Dead Sea exploring party have successfully and satisfactorily completed their task, and returned to Jerusalem, where they were May 19th. They sounded the sea in its parts to the depth of 600 fathoms, and found the bottom crusted with crystalised salt. The pestilentlal effects attributed to the waters turn out to be fabulous. Ducks were seen swimming over the surface, and partridges abounded along the shore. The party were upon the sea in their boats, or encamped on its borders, for some two months, and their researches and estimates have been of the most thorough and interesting character. All were in excellent health and spirits, no sickness or accident having occurred. By the Arabs they had been received, and uniformly treated with the utmost kindness and attention. The Syrians consider "the men of the Jordan," as they call them, the greatest heroes of the day. Lieutenants Lynch and Dale will visit under the most favourable oircumstances, all the places made memorable in Scriptural history, and we may expect from them a highly interesting account of their exploration of the Dead Sea, and their adventures in the Holy Land.

Evil Company.

Sophronius, a wise teacher, could not suffer even his grown up sons and daughters to associate with those whose conduct was not pure and upright.

"Dear father" said the gentle Eulalia to him one day when he forbade her, in company with her brother, to visit the volatile Lucy, "dear father you must think us very childish, if you imagine that we could be exposed to danger by it." The father took in silence a dead coal from the hearth, and reached it to his daughter. "It will not burn you my child, take it."

Eulalia did so, and behold her delicate white hand was soiled and blackened, and as it chanced, her white dress also. "We cannot be too careful in handlng coals," said Eulalia in vexation.

"Yes, truly," said her father, "you see my child, that coals, even if they do not burn blacken. So it is with the company of the vicious."

Superstition against Improvements.

The German farmers have protested against the transit of the electric telegraphs; their protest commences: "We the inhabitants of Cadenbergh, have once and again protested against the transit of the electric wires through land because they are injurious to our lives and property, and pernicious to our crops." They seem good agricultural protectionists.

New Potatoe.

Mr. Edwin Bryant discovered an oval root or tuber, during his California tour, which he takes the liberty of calling a new species of potatoe. It is a more agreeable esculent, he says, than the common Irish potatoe, farinaceous in its composition, and of course highly nutritious, and undoubtedly capable of cultivation in this climate. It is only about an inch in its lateral diameter. The story is not so large, at any rate, as those once told of the "Rohans." Nor the price either, we hope, knowing something about that by experience.

A Quaker Woman's Sermon.

My dear friends: There are three things that I very much wonder at. The first is that children should be so foolish as to throw up stones, brickbats and clubs into fruit trees, to knock down fruit: if they would only let it alone it would fall itself. The second is, that men should go to war and kill one another: if they would only let one another alone they would die themselves. And the third and last thing which I wonder at is, that young men should be so unwise as to go after young women; for if they would stay at home the young women would come after them.

The condition of the most unfortunate is also the most despised; is it not enough that they are miserable, but to enhance their affliction, they must be persecuted with ignominy and scorn. In truth, man is a very savage animal.

Hide not the Deed.

The day before the failure of the Canal Bank at Albany, $1,000 of its notes were paid to workmen on the Attica and Buffalo Railroad, all of which were subsequently exchanged for good money by a Director of the Company. That director's name should not be hid.

Prophecies.

Philip Olivarius, a monk of Orval, in the year 1544 predicted, it is said, all the remarkable events of the present century. The following lines have long been current in Germany "I would not be a King in 1848; I would not be a soldier in 1846; I would not be a grave-digger in 1850. But I would be whatever you please in 1851."

A cake of native silver, dug from a vein belonging to the Lake Superior Company, Eagle River, has just been assayed at the U. S. Mint. The weight of the cake was 9 lbs. 10 oz. avoirdupois and it yielded $118,57 hard money.

In the course of a conversation in the House of Commons the curious fact was elicited that the streets of London had increased upon the aggregate length of no less than 200 miles between 1830 and 1848, or at the rate of about 12 miles of street per anum.

A Mexican Squash produced from seed brought from Vera Cruz, is growing at Mobile, one of the fruit measured in circumference two feet five inches by two and a half. The fruit is whitish yellow, and in flavor, far superior to the best American squashes.

Four persons were arrested in this city last week for conspiracy and fraudulent sale of a patent right, for a fish-hook. We believe they are out on bail. The duped and defrauded man we have heard, paid $500 for the patent right.

The Air Line of Railroad belonging to the "Inventors' Institute," is reckoned to be the greatest invention of the age. Those that purchase stock will not need to purchase snuff, but those who want to buy stock had better buy the snuff first.

Letters from Tabreez mention that the heir apparent of Persia a youthful prince of 16 years of age, has taken to himself nine wives and ordered one more weekly, until they reach the full number of three hundred and sixty-five.

The rock known by the name of the Dent de Naye, which was situated at a height of 7000 feet, fell on the 3d ult. into the valley of Montroux, Switzerland, and destroyed seven houses and all the persons in them. It is said that upwards of 2000 head of cattle were killed in the fields.

Intemperance prevails to such an extent in England and Wales, that one hundred and sixty die daily of drunkenness. This fact is stated on the authority of a late report to parliament.

The telegraph between Troy, N. Y. and Montreal has been carried across the St. Lawrence, and is now working finely direct from Troy to Montreal.

In English not more than a dozen words end in *a*; about two dozen end in *o*. In *y* we have no less than 4900, about one eighth of our whole language, our words amounting to 35,000.

Probably there are no two words which more distinctly point out cause and consequence than these—gin and bitters.

No subject is so barren that something may not be well said upon it; but although the subject should be ever so barren, yet a man has still in reserve the politeness of expression, of which he may be an absolute master, and which can never fail him.

In New York there are 215 churches or chapels, while about the same population in Manchester and its neighbourhood has only 189. Not so bad that for voluntaryism.

A barrel of yeast that was on board of a steamboat near Bristol, England, lately, exploded with such violence that a woman, who had unluckily seated herself on the cask, was thrown a height of ten feet in the air.

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For the Scientific American.

Evaporation and Condensation.

It is well known that although evaporation is caused by heat, yet in its turn, it has the property of producing cold. Every engineer knows that when steam has been confined until it has acquired a very high pressure, as in the case of high pressure engines, upon its liberation, it may be handled with impunity.—The rapid evaporation of ether at the temperature of our atmosphere produces cold, and the sprinkling of an animal in the sunshine continuously with this fluid, will freeze it to death. During the meridian heat of summer and while the earth is almost parched, the radiation of heat and of moisture from every blade of grass, produces a coolness and freshness that is sweet to the traveller in comparison with the burning desert, where no evaporation from pool or shrub is known. And when the sun sets behinds the western mountains, every blade of glass and every flower becomes a condenser on which are deposited the spangled dew drops which gem the green fields with a radiance more fair than if they were crowned with diamonds or decked with pearls.

The amount of evaporation, is greatest in hot climates, and less as we approach towards the poles. No visible vapor is considered to ascend above the congelation height, which in the tropics, is never above 28,000 feet, and in this State 10,000 feet. Vapor is only water combined with a certain quantity of caloric, and exists in the atmosphere as an elastic and invisible fluid like the air itself, and by some has been supposed to be better adapted for the propulsion of machinery in that state along with air, than to heat water to raise steam. I have heard the assertion made, "that 50° of heat applied to heat the air for mechanical propulsion, will generate a fluid as elastic as steam under the pressure of two atmospheres." This assertion still remains to be satisfactorily proven. More water is evaporated from land covered with trees and grain fields than from the surface of rivers and lakes. It is calculated that there annually falls upon the land, 30,960 cubic miles only, leaving 17,280 for evaporation, an enormous quantity certainly, and shows a wise and benificent design in the Great Creator.

Evaporation in all cases conveys electricicity into the atmosphere, and when steam is condensed into water, the air becomes negatively electric. The laws of evaporation and condensation when combined with caloric, perform a most important part in the operations of art. Without the cooling property exerted in the evaporation of fluids, in vain would be our efforts to drive the locomotive over the earth with the speed of the ea gle's wing. Without the cooling property developed in evaporation, the steam boiler would soon become red hot and would explode in fragments under the pressure, but the absorbing capacity of water for caloric, which combines and flies off with it in the steam, robs the furnace of its energy to destroy, and imparts a power to man to tame it as he would the fiery courser. This very quality of evaporation—this property of water and caloric, does not belong to carburetted hydrogen combined with the atmosphere, nor to gunpowder, nor any other of the gases, whether produced from combustion or any other project that ever has been suggested—hence such schemes have obstacles, fatal obstacles to overcome in their employment and application to purposes of general usefulness. Many a gas and powder propeller inventor would have saved both time and money, had he spent two weeks in close study of the properties of steam and the principles of evaporation.

It is very singular that whenever a body changes its state chemically, (so far as we are yet acquainted) that it either combines, or separates from caloric—the dissolution of one body assisting in the formation of another.—Water becomes steam by absorbing heat, and steam becomes water by parting with its heat. From a fluid it becomes, by the quantity of caloric absorbed, an explosive gas, while on the other hand by the quantity of heat thrown off, it becomes a frozen solid. In all this we perceive a beautiful and harmonious arrangemen of natural law. The meanest flower "that wastes its fragrance on the desert air," performs not only an important part in the vegetable, but to the animal economy. Every shrub that grows by the side of the workshop is a curious workshop within itself. The retort of the alchymist is no more correct than the retort comprised within an humble blade of grass. "He who studies nature is well adapted to study art."

R. Bartholomew.

For the Scientific American,

The Importance of one Gas.

Without oxygen animal life would cease to exist. It is the principal supporter of combustion and therefore without it we neither could light a candle nor kindle a fire. The gas is invisible and inodorous, and yet for all this, it is of the most importance and by its various uses, it fulfills the divine allusion to the simple laws of nature "he has chosen the weak things of this world to confound the mighty."

It exists in larger quantities than any other body; it constitutes more than a fifth of the atmosphere by which this earth is surrounded—eight-ninths of all the water which exists upon its surface, and besides existing in larger quantities in all animal and vegetable substances, it forms at least a third part of the total weight of the globe.

The air contains about 21 parts of oxygen in 100; if this proportion of oxygen is lessened to 17, our lamps go out, and combustion of every kind ceases; and at 15 parts in a hundred animal life is destroyed. These facts show us how nicely adjusted are the elements of nature, and that those substances which now are arranged by the hand of Providence, to conduce to our comfort and the support of life, would in other proportions become our worst enemies.

For the Scientific American.

Nova Scotia Mines.

Messrs. Editors :—I notice in a late number of your paper an article upon the iron mines of Nova Scotia. As I had the pleasure during the past autumn of visiting the region in which the mines spoken of occur, for the purpose of examining some mining localities, I can bear full testimony to the rich metaliferous character of that part of the Province.—This is not only true in regard to iron and coal but it is also rich in other natural products.—Some of these, such as gypsum, the oxides of manganese, &c., have been rendered available; others no less valuable, still lie dormant.

Public attention is now being called to those rich deposits. While it is true that the odious monopoly of the Mining Association is a great, and in many locations, an effectual bar to mining enterprise; still there are many mineral tracts upon which this Association has no claim; the minerals not having been reserved by the crown when the land was granted; and there are many grants in which only part of the minerals were reserved. And though there is much mineral wealth in the United States yet undeveloped, I cannot but look upon the region round the Bay of Fundy as possessing from its favorable climate, ready means of access and communication and its other facilities for business, peculiar advantages and inducements for mining enterprise.

I visited, among other localities, that of the Londonderry Mining Company mentioned in the article above referred to, and a few additional particulars may not be uninteresting to your readers.

These ores occur in what is called Folly Mountain, which is a portion of the Cobequid chain of hills running parallel to and about 6 miles distant from, the Cobequid Bay. The rock, or "country," as miners term it, is grey quartz, with dark colored slate and greenstone, the whole either vertical with East and West strike or dip at right angles to the Southward. The ores are the specular or glance ore, ochrey red ore, carbonate of iron, brown hematite, and and ankerite. These all form a venigenous deposit coinciding in situation with the rock strata The specular ore often occurs in a state of perfect purity, or mixed with a very small proportion only of silicious matter, and is frequently found in the fissures of the ankerite and combined with it. The ochrey red ore is often found pure in masses of large quantity, and also accompanies and is mixed with the ankerite. This latter mineral occurs in vast abundance. It has a large grained crystaline structure, of reddish and yellowish colors, and is usually more or less mixed with the specular ore. The reddish variety is colored by the peroxide of iron. The richness of these ores according to the analyses of the celebrated Dr. Ure of London, and J. W. Dawson, Esq. of Pictou, Nova Scotia, is as follows:

Specular or Glance Ore :—This is a pure peroxide of iron, yielding from 97 to 99 parts of the peroxide in 100. This would give from 65 to 70 parts of metallic iron in 100 of ore.

Ochrey Red Ore :—This gave 97 per cent of peroxide of iron. As an ore of iron, it is therefore but little if any inferior to the Micaceous variety.

Ankerite :—A pure specimen of this gave in 100 parts :—

Carbonate of Iron,	23.2
Carbonate of Lime,	54.0
Carbonate of Magnesia,	22 0
Silicious Sand	00.3
	99.5

Carbonate of Iron :—100 parts of this gave :

Protoxide of Iron,	40.5
Carbonic Acid,	21.7
Silica with a very little alumina and a trace merely of lime,	25.0
Moisture or water,	9.8
	100.0

Hematite :—100 parts gave :

Peroxide of Iron,	85.8
Silica,	8 2
Moisture,	6.0
	100.0

At the Styrian Mines where ankerite occurs in quantity and of a composition very nearly resembling the above; it is highly prized both as an ore and a flux, and it can scarcely be doubted that the varieties found in this location will prove of much value for similar purposes.

In regard to these ores Dr. Ure remark :—"Were this (the specular) ore deoxidized by being calcined in a pulverulent state mixed with ground wood charcoal in close earthen retorts, like those now used in some gas works; it would become reduced to fine soft iron, which being worked in the puddling furnace would afford an excellent malleable iron without the cost and the labor of a blast furnace. In this point of view an ore of this remarkable purity will yield either wrought iron or steel at a remarkably cheap rate." Of the carbonate of iron he says: "This is analagous to the celebrated *Black Band* of Scotland by which so many great fortunes have recently been made, and is the Iron Stone so profitably smelted at the Clyde Iron works from the Cross Basket and other deposits in that neighborhood. It affords the best cast iron for hollow wares, being very pleasant and giving a very smooth surface to castings, like the Carron pots. The humatite is analagous to the fine kidney ore of Cumberland, which produces the only good English steel iron."—And in conclusion he says: "The ores are unexceptionably good and easily smelted.—Charcoal iron made from these ores will rival the best marks of Swedish iron."

From the above. it seems that the quality of these ores cannot be doubted. The above analyses do not show, neither have I been able to discover any sulphur, chrome or other injurious ingredients. This also seems to be confirmed by the statements of Mr. Mushatt, as published in the article referred to.

At the time I visited the locality but little had been done in prospecting, but as far as the lode had been opened, the quantity appears inexhaustible.

Another item in the perspective value of these mines, is, that the contemplated Halifax and Quebec Railroad will cross this chain of hills very near this locality. Should this road ever be constructed it will, according to the Report of the Engineers, run within less than a mile of these mines.

These facts, together with the favorable situation of the locality, the lode cropping out on the top of a hill 200 or 300 feet in height, and presenting a favorable opportunity for drainage by duct levels or cross cuts; a good shipping point of easy access about 6 miles distant, with roads and other facilities for business already in existence; abundance of wood easily and cheaply obtained; and a section of the carboniferous rocks extending from the foot of the hill to the Bay, in which strata of bituminous shale and coal occur, and from which coal can probably be obtained should it be wanted hereafter; these all combined present inducements for mining enterprise in the iron business equalled by few if any other locations in this or any other country.

I did not notice any traces of lead or copper ores as mentioned by Mr. Mushat, but these ores may hereafter be found. The limited explorations at the time of my visit would not warrant the assertion that they do not exist there. This location is but one of many that now promise good returns, and much mineral wealth will yet be discovered that is not under the Crown or the Mining Association And I think with you that public attention should be called to this region. Its contiguity to our own markets; the facilities for communication and transportation, and the connection which now exists between different parts of this Continent, and which is constantly growing stronger, render this subject worthy of notice. Yours, &c. B.

Northampton, Mass. July 22, 1848.

Visit to Lord Rosse's Telescope.

Dr. Robinson lately gave an interesting account, to the Royal Dublin Academy, of the present condition of Lord Rosse's telescope The figure of the speculum not being quite perfect, it was resolved to repeat the polishing process, which requires to be performed at a temperatnre of 55°, whilst the artificial heat, by means of which this has to be effected, in winter occasions a dryness in the air in consequence of which the polishing material will not remain on the speculum. This difficulty was ingeniously obviated by a jet of steam. The result was admirable. The telescope is to receive a removal in right ascension from the ground, connected with clock-work; an eye-piece of large field, but capable of being replaced by the usual one in an instant, to obviate the difficulty of finding objects; and a peculiar micrometer of parallel glass with a position circle attached. Unfavorable weather had prevented much being done with the telescope.—But in one good night Dr. Robinson observed in the moon the large flat bottom of the crater covered with fragments, and became satisfied that one of the bright stripes so often discussed had no visible elevation above the general surface.—In the belts of Jupiter, streaks like those of Pyrrhus' cloud were seen, evidently through a considerable and imperfectly transparent atmosphere. The nebula of Orion, even with the imperfect mirror and in bad nights, was seen to be composed of stars in that part which presents the strange flocculent appearance described by Sir John Herschel. But in addition to the two stars of the trapezium discovered by the telescopes of Dorpat and Kensington, the six feet showed other two after the first glance at its polish was completed. The planetary nebula situated in the splendid cluster Messier was seen to be a disc of small stars uniformly distributed and surrounded by the larger. The most remarkable nebular arrangement which the instrument has revealed is that where the stars are grouped in spirals, one of which Lord Rosse described in 1845. Dr. Robinson has now discovered others—h. 604, seen by Herschel as a bicentral nebula—Messier 99, in which the centre is a cluster of stars—Messier 97 looking with the finding eye-piece like a figure of 8, but shown by the higher powers to be star spirals, related to two centres, appearing like stars with dark spaces around them. Struve, in computing the limit of the milky way, assumes it in its greatest extent "unfathomable by the telescope." Dr. Robinson is certain that its remotest stars are very far within the limit of the 6-feet, and very much larger than those of the nebula of Orion.

A Singular Plant.

A plant has recently been discovered in northern India, which, when chewed, actually destroys the power of the tongue to appreciate the taste of sugar. It is called the Indian plant, and the effect it produces remains about twenty-four hours. It is suggested that this may lead to some important philosophical discoveries in regard to the organ of taste.

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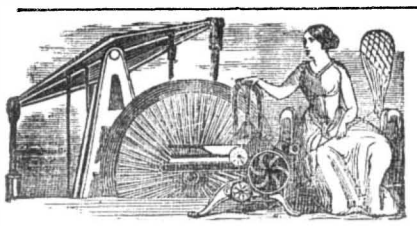


New Inventions.

Paper Folding Machine.

We stated a few weeks since that Mr. Crane of Mass., had invented a machine for folding newspapers, to be attached to printing presses. We have since learned that Messrs. Smith & Wells, of Springfield, Mass. are the inventors of this contrivance, Mr. Crane's machine being for catching the sheets as they come from the press and laying them evenly together, an operation called "flying." *The Paper Folder* is now in successful operation at Springfield, and is pronounced by those who have seen it to be one of the most curious and ingenious pieces of mechanism which have been brought out in a long time. It will no doubt appear wonderful to most of our readers, that a newspaper, the Scientific American for instance, can be taken in open sheet from the steam press, and instantly folded into as many different folds as desired by the unaided operation of machinery! Yet this is accomplished by Messrs. Smith & Wells' invention. We omit a more particular description at present as we shall give an engraving of the machine in a week or two.

Shingle Shaving Machine.

Mr. S. Brewer, of Mount Henry, Montgomery county, Tenn., has obtained a patent for a new and improved machine for shaving shingles.

The Machine shaves both sides of two shingles at every stroke of the pittman, giving the proper slope, and throwing the shingles clear of the Machine. It is simple in its construction; not liable to get out of order; may be tended by a single hand; is a light draught for a horse or mule, but may be worked by any power; and may be easily removed from place to place and set up with little loss of time. The shingles made on the machine are of uniform thickness and of the very best quality, and may be made of any timbers of which shingles are usually made by hand.

New Paddle-Wheel.

Mr. Jacob R. Custer, of Norristown, has constructed a hanging paddle-wheel to be used in propelling boats on rivers and canals. The paddles hang in a vertical position, supported by spur wheels and pinions, so that they dip and rise without disturbing the water. There are some five or six paddles on the wheel, adapted to each stroke of the engine: one will be dipping and another rising, alternately. The Norristown Herald states, that it has been brought out to the order of a company, and judging from the experiments which we have seen made with it, it cannot fail to prove the thing so long wanted to take the place of horse-power on our canals.

[It is rather a singular description and precludes any favorable impression regarding it. The cranks of all the shafts to drive the paddles are placed at right angles with one another, so that is nothing new, other parts may be new, but cog wheels and pinions are objectionable.—Ed.

More Telegraphs.

An English paper by the last steamer says,—"Last week a number of gentlemen interested in mechanical science were afforded a 'private view,' at the offices of Mr. Whishaw, Gray's-inn-square, of a number of inventions for facilitating verbal communication. Among the most remarkable were several hydraulic telegraphs, all in working order, and performing their functions in a very satisfactory manner."

We suppose the inventors are afraid to make them public. At best they will not be valuable private property.

Bone Pens.

Pens made out of bones are now in use in England and sold at the rate of fifty for twenty two cents. They are pronounced to be as flexible as the quill and far more durable.

E. Burt's Plaid Loom.

We have seen a letter of Mr. W. Norton, jr. of Marlboro Mills to Enoch Burt, Esq. of Manchester, Conn., the first American inventor of the Power Plaid Loom, which speaks volumes in praise of his invention. Mr. Norton says: "In one week's work, performed by one weaver (Mrs. Bell,) in regular mill hours, the cloth room book records 938 yards, equivalent to 39 yards and a fraction to a loom per day. I have no hesitancy in challenging the whole United States to beat it; and Mr. Blythe, the foreman, adds, "*the Continent of Europe too.*" The cloth woven was forty eight picks to the inch. It is but a few years since it was deemed impossible to weave ginghams by the power loom. When we reflect upon the great improvements made within a few years upon machinery for manufacturing, and the greatly reduced prices of cloth arising therefrom, we cannot but feel, that our inventors, manufacturers, mechanics and operatives, are not estimated according to their value, neither are they rewarded according to the benefits they have conferred upon the country. They are the class of persons that "have done the state some service."

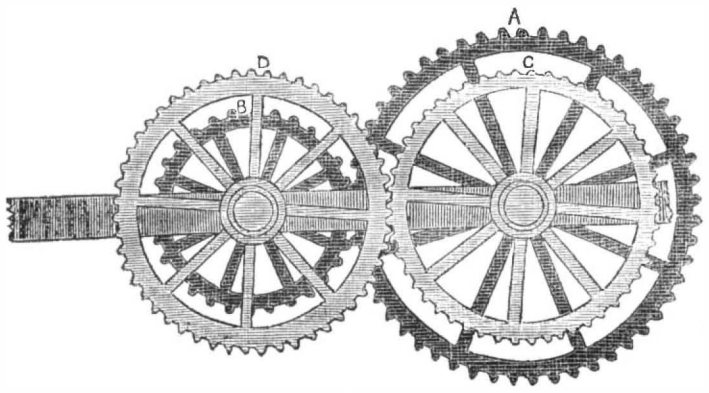
Atmospheric Churns.

The common rotary handle churn, so old and well known, can be constructed to answer all the purposes of any atmospheric churn in existence, without increasing the cost more than six or seven cents. All that is necessary for this purpose, is simply to use two tubes on the lid instead of one. Let them be placed at right angles to one another running in an oblique direction in the lid, near to the curve line of the paddle and as the handle acts as a blower, one tube will supply the churn with the atmospheric and from the other the gas will be expelled and butter made in a very short time, and each tube will answer for the reverse purpose according to the motion of the handle.

New Marble.

A patent has been granted by the authorities of Cuba for five years to Messrs. V. Pelopi & A. Potelesta, for the invention of a compound made from the mineral productions of the Island, which compound becomes in a short time as hard as marble, and may be used for the same purpose, with the advantage of being far less expensive.

COG WHEELS OF UNLIMITED POWER AND VELOCITY.



This is an arrangement of cog or toothed wheels, by which unlimited power or velocity can be obtained by means of only four wheels, and also of turning in the same or contrary directions relatively to their partners. This is an extension of Watt's highly ingenious sun and planet wheels, and is as follows:—

A and C (in the plate) are two wheels on the same axle, *free of each other*, and B and D are two concentric wheels on another centre; but these two are fastened together, so that one cannot move without the other: all these four wheels being fixed on a bar so that they work together, and if they were all the same size they would in no respect differ from the sun and planet wheels in their motions; but in order to produce a power or velocity unlimited by anything but friction, or difficulty of workmanship, the four wheels are not all of the same diameter, but the less the difference of diameter of the two wheels A and B, which work together, the greater is the difference of their motions. If then we wish to give a very slow motion to C, A must be a little larger than B; C and D being equal, the motion then is produced by keeping A and C stationary while the bar is turned round their centre, which will cause C to move very slowly, because the wheel B being a little smaller than the wheel A, must evidently in rolling round it once, revolve round its own centre a little more than once, and wheel D being a fixture with wheel B, must do the same. But wheel D and wheel A being of the same size, C must also turn *a little* round its own centre in order to allow D and C to work together, while (these two being of the same size) the one turns faster than the other; the whole motion of C then consists of the surplus velocity of B, to what it would have if of the same size as A, which surplus might be so small that C might only move the hundredth part of a revolution to a whole revolution of the bar, while the wheel A is stationary and the bar is turned round it, so that C would turn with great power. But if velocity be the object, then A must be fixed while C is turned round by a handle fixed on its rim, which will cause the bar to spin quickly round while the motion of C is very slow. If we wish one of the wheels to turn in the same direction as the wheel whose teeth it works with, C must be held fast, while the bar is turned round, in which case this motion will be produced; but it will be of wheel A instead of C which will then be stationary. A fourth kind of motion would result if the bar were to be held fixed, and motion were given to one wheel by moving the one whose teeth worked with it, but no difference of motion would be thereby produced excepting between the two free wheels A C, and this motion has nothing extraordinary in it.

The slow motion seems particularly applicable to cranes, &c., where great power might be wanted without much friction or complication; and the quick motion seems as suitable to clock-work, &c.

Preserving Wood.

A Mr. Payne, in England, has patented a process for preserving timber, the result of which is, that wood so preserved becomes imperishable,—impervious to wet or dry rot, and perfectly uninflammable. The softest woods so prepared become susceptible of the finest polish.

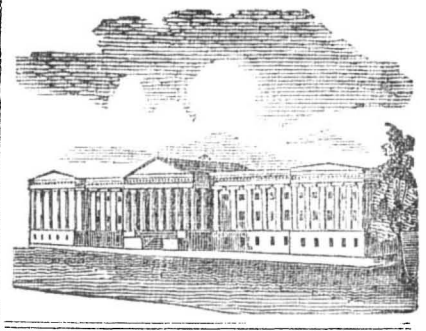
Fire Annihilator.

The London Builder describes a small machine, called "the fire annihilator," which, by means of a sudden explosion of nitre, carbon, and gypsum "creates instantaneously an enormous quantity of steam, equivalent to and as effective as a fire engine."

Well, that is something new in the chemical world! "nitre, carbon, (charcoal) and unprepared plaster of Paris," to extinguish fires! Just about as sensible as heating up water to form steam to extinguish fire, when by throwing cold water on the fire it would do the same thing more rapid, and at far less expense.

Rolling Machinery.

A patent has been lately granted to Messrs. Winslow & Snyder, of Troy. N. Y. for improvement in machinery for rolling puddlers balls. They employ a flange on one of the rollers of the concave to prevent the bloom from spreading out. They also employ an eccentric chain formed squeezer, and use a hammer to strike and upset the bloom, the flange performing the office of an anvil.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 25, 1848.

To Thomas Spencer, of Syracuse, N. Y., for improvement in Furnaces for Evaporators. Patented July 25, 1848.

To William S. Barnes, of Buffalo, N. Y. for improvement in Water Wheels. Patented July 25, 1848.

To Edwin J. Smith and Horace Griswold, of Delhi, N. Y., for improvement in Hill Side Ploughs. Patented July 25, 1848.

To Robert Robinson, of Newburyport, Mass. for improvement in Radiators. Patented July 25, 1848.

To John M. Palton and S. D. Ball, of Milton, Pa., for improvement in Cooking Stoves. Patented July 25, 1848.

To Charles Stumer, of New York, for improvement in Enamels for Iron. Patented July 25, 1848.

To William T. Barnes, of Buffalo, N. Y., for improvement in Twyeres. Patented in the United States July 25, 1848. In Canada ——,

INVENTOR'S CLAIMS.

Brick Kilns.

To Joseph Ogle, of Baltimore, Md., for improvement in Brick Kilns. Patented 9th May.

Claim.—What I claim as my invention, and desire to secure by Letters Patent, is:—

"1 st: The interposition of a grating of fine brick or other material applicable to the purpose, between the fire snd the brick to be burned, in the manner herein described, by means of which I prevent the fire in the arches from immediate contact with the brick to be burnt, thereby obviating the danger of the bricks adhering together in the lower portion of the kiln, and blocking up the channels formed in the setting of the brick for the circulation of the heat.

"2nd: The construction of a grating along the floor of the kiln of fine brick or other suitable material, in the manner above specified, and combining the same with the grating (D,) and draft holes in the roof, by means of which I cause the greater part of the heat emanating from the arches to circulate between the floor of the kiln and the grating (*d*, D',) and thence upward to every part of the kiln, thus enabling the operator to burn the brick to any degree of hardness requisite."

Bricks.

To Nathan Towson, of Washington, D. C. improvement in Bricks, Patented 16th May, 2848. Claim—What I claim as my invention and desire to secure by Letters Patent, is the forming brick with dove-tail indentations, by means of which the brick, when covered with mortar, will be held together, and by which mortar, plaster, or other material used in plastering, stuccoing, or rough casting brick work, will be securely fastened thereto, and prevented cracking and falling or peeling off.

Bending Sheet Metal.

To John Epply of York, Pa, for improvement in machines for Bending Sheet Metal, Patented 16th May, 1848. Claim—Having thus fully described by invention, what I claim and desire to secure by Letters Patent, is the combination of the revolving mandrel and concave recess, constructed substantially in the manner and for the purpose described

New Material for Cloth.

It has recently been found that the leaves of the pine apple contain an extremely fine, glossy, and silken fibre, easily separated by heating and washing. The ultimate fibres are finer than those of cotton or linen, applicable to the same purposes.

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NEW YORK, AUGUST 5, 1848.

Bentham's Planing Machines.

After the process of sawing there is no process more laborious to workers in wood than that of planing, and accordingly attempts were made long ago to perform this mechanical operation by machinery. The first account that we have of machinery for this purpose was invented in England in 1791 by Gen. Bentham, but it was not attended with all the advantages he expected. It was only to exonerate the workman from the change of his tool and render any laborer capable of performing the operation—a great advantage, no doubt, in the planing art. Bentham's plane was made the full width of the board and on each side of it were fixed fillets which projected below the the face of the plane, just as much as it was intended to reduce the board in thickness, serving to guide the plane sideways and guage the thickness, because when the boards were reduced to this amount the fillets rested on the bench on which the board was placed The plane was kept down either by its own weight or by weight added to it, the latter being so continued as to shift their position during the time the plane was making its stroke—the pressure at first acting forwards and then on the hind part, to prevent the fore part dipping down when leaving the board. By another contrivance the plane was lifted up on its return, so as to clear the cutting edge of the wood. This was done by a piece of wood that acted as a handle to the plane and to which the power was applied. It was placed upon an axle extending across the width of the plane, and carrying on each a short lever provided with rollers at their extremities. The handle projected upwards from the plane, which being forced forward by it assumed an inclined position, as also did the the short levers, so that their rollers then rose above the cheeks of the plane and raised it off the bench, the plane being supported by them on its return. The bench of Bentham was peculiar. In cases where the boards were winding and irregular on the lower side so that they could not lie flat on the bench, it was provided with two cheeks which might be brought close to the edges of the board, so as to hold the latter steadily between them, the cheeks having two or more rows of teeth to hold the wood in its place. These cheeks were made so as to rise and fall with the bench to accomodate the whole to the different thicknesses of wood. If a very thin board had to be planed it was liable to spring up to the iron so as to be reduced after the plane came to rest with its cheeks upon the bench. To avoid this, the edges of the board were held by the sides of the bench above mentioned, but as it was liable to spring up in the middle, heavy rollers, or rollers loaded with weights, were fitted in apertures made in the plane as near as possible to the cutting edge which answered the purpose of keeping the plane close down to the bench. For planing pieces of greater thickness at one end than the other, the cheeks of the plane were supported on wooden rollers laid on the bench on each side of the wood, as much thicker at one end as the board at the other, therefore when the plane had reduced the wood the cheeks came to their bearing on these rollers and caused the plane to move not parallel with the bench, but inclined according to degree in which it was thicker at one end than the other.—In like manner, by using them of different thicknesses at the different sides, the boards were made feather edged. As all the adjustments were made and regulated by machinery, none of the skill of the worker was required.

The subject of Planing Machine Patents having created more heart burning litigation than any other patents, excepting for irregular turning, we have been frequently requested, both verbally and by letter, to publish some information in which confidence could be placed respecting those patents granted for planing machines previous to Muir's in England, and Woodworth's in the United States, as by fair inference, it may be said, that although these two are very similar, yet being invented at such a distance from each other, and at nearly the same time, the one would not in strict justice invalidate the other in regard to priority. Many will be pleased to read old Bentham's plan of planing, and next week we shall publish, if not the whole, at least part of Bramah's specification, the only patent of much importance granted previous to those of Woodworth's and Muir's.

Inventor of the Last Machine.

Mr. Thomas Masscross, of Hartford, Conn. has sent us a letter stating that there is an inventor in that place who claims to have invented the Last Machine some years before Mr. Blanchard and that he has proof of the same. He desires us to notice this fact, because he thinks "that among the many names of persons who have invented or improved Last Machines, the original inventor should receive some credit." He says that the invention was distinctly the turning of irregular forms by the working over the whole surface of the model to turn any given object. Mr. Mascross also informs us that the person he speaks of can be found at all times to prove the priority of his invention. The original inventor should be protected, and that this has not been done before, is something we cannot explain and wants clearing up.

Practical Value of Science.

Many ignorant despisers of systematic natural history reproach us on wasting our time on nomenclature or in watching and describing the metamorphos and general economy of insects: and contend that it is only from what they call "practical" men—that is to say, farmers, and gardeners—that effective means of destroying noxious species—one of the main objects of etymology, taken in its widest scope—can be looked for. Such objectors should be referred to a paper read by M. Guerin Meneville to the Royal Academy of Sciences at Paris in Jan., 1847, from which it appeared that while the cultivators of the olive oil in the south of France—who in two years out of three lost oil to the amount of 6,000,000 francs annually by the attacks on their olives of the grub of a little fly (DACUS OLEÆA)—were utterly unable with all their "practical" skill, to help themselves in any shape. M. Guerin Meneville though no cultivator, applying his antomological knowledge of the genius and species of the insect, and of its peculiar economy, to the case, advised that the olives should be gathered and crushed much earlier than usual, and before the grubs had had time to eat the greater part of the pulp of the fruit: and by their adoption of this simple plan, the proprietors of olives in the years they are attacked by the Dacus, can now obtain an increased annual produce of oil, equal in value to $120,000, which was formerly lost in consequence of their allowing the grubs to go on eating the olives till they are dropped from the tree.

Machinery for the City of Mexico.

A short time ago there was shipped from Mobile, from the foundry of Messrs. Gaty, McClare & Glasby, a machine for rolling sheet lead. This machine was built for a citizen of the city of Mexico. It is propelled by a steam engine, attached to the machine which is constructed so as to produce a reverse motion The lead in the pig is reduced by the rollers of the machine into sheets. It is then passed through rollers of exact surfaces, to any desired thickness and width. The moment the crushed sheet has passed through between the rollers, the motion is reversed by a sliding valve attatched to the engine, and the shee carried back. If it is desirable to reduce it still more, the guage of the rollers is changed, and it goes through again.

In the city of Mexico, the houses are in many instances covered with lead, and this machine has been built and will be used to supply this demand.

For the Scientific American

Cost of Manufacturing.

CLINTON, JONES COUNTY, GEORGIA, July 10, 1848

William Montgomery, Esq

DEAR SIR :—I read a communication of yours to the Scientific American, giving the cost of Cotton Machinery for a factory of 1000 spindles, necessary looms, &c. The community are under obligation to you for this information. But still, a new beginner is yet in the dark somewhat as to the profits of the business, unless he knows about the quantity and cost of the labor required to keep his spindles and looms in operation. Will you please do me the further favor by giving me this information, and much oblige,

Your obd't servant, A. GRISWOLD.

Messrs. Munn & Co.

GENTLEMEN :—Having received the above by mail, I beg to add the following to my article on the cost of a Cotton Mill.

A "new beginner" must expect to remain in a state of partial darkness in regard to the practical operations and results of a cotton factory, even when furnished with correct statements of the cost of labor and material for manufacturing a *particular* style of cloth.

No general estimate can be given which will be of universal application, any more than a particular multiplier and divisor can be found for the solution of all arithmetical problems.

In the Craigville Mills under my charge, the goods manufactured are Print Cloths, 64 by 64 threads per inch. The number of hands in the whole establishment is equal to the number of looms; but in factories where coarse sheetings, or No. 8 to 16 yarns are made nearly two hands for each loom would be required to operate the mill.

From this it is evident that the style of goods intended to be made must in all cases be taken into consideration when estimating "the quantity of labor required to keep a certain number of spindles and looms in operation."

In order to answer more particularly such enquirers as Mr. Griswold, I will suppose a mill of 4000 spindles with looms for manufacturing the style of goods most appropriate to a Southern manufactory, (say No. 8 to 16 yarn,) and give the cost of machinery, &c. accordingly.

Dimensions of a factory to contain 4000 mule and throstle spindles with looms on No 8 to 15 yarn: Width of building 50 feet, length 132 feet (in the clear,) three stories high.

The usual cost of a brick factory of the dimensions above given, in the Northern States, is	$12,224
4000 spindles with looms on No. 8 to 16 yarn,	38,720
Water wheel to drive 4000 spindles, &c.	1,300
Steam engine to drive the same,	6,000

This includes all expense of placing and starting the engine.

The cost of geering for the above machinery, which includes shatting, pullies, hangers, &c., is	$2,000
Belting,	1,040

The usual number of horse power allowed to such a mill is sixty eight. The actual power consumed is 52 horse. The width of belt to transmit the power from engine or water wheel when the belt runs 1800 feet per minute, and the diameter of the smallest drum is 6 feet—should be 30 inches—which may be divided into belts of 15 inches or any convenient width.

Usual production of a factory of the above capacity, viz. 4000 spindles and 96 looms, is of goods per week, suppose the yarn to be 14's,	6,600 lbs.
Number of operatives,	132
Amount paid out per week, including all expense except cost of cotton,	$640

Cost of yard wide goods, No. 14 yarn, 44 picks per inch filling and warp, is 5.95 cents when the cotton is worth 6 cents.

Cost for different kinds of cotton, as follows:

Cotton 6¼ cts	—cost of goods per yard	6 20 cts.
do	7 do	do	do	do	6 45 cts.
do	7½ do	do	do	do	6 70 cts.
do	8 do	do	do	do	6.95 cts.

From this it may be perceived that half a cent added to the price of cotton adds one quarter of a cent to the cost of the goods.

It may not be out of place to remark here, that the cotton used for making the above cloth may now be purchased at 5½ cents per lb This would reduce the cost to 5.70 cents per yard. Yet they only bring 5½ and 6 cents in the market at present; hence many establishments are going behind, while the very best merely clear themselves. Unless cotton can be had for 3½ cents, this state of things cannot much longer continue. The future prospects for the cotton manufactures of this country look gloomy enough, and it becomes all interested in saving this branch of our national industry from destruction to bestir themselves in arresting the desolating policy of our legislative authorities, into whose hands fortune has placed the balance of power for a period, short indeed, yet long enough, like the storms of an hour, to sweep away the fruits of ages of industry.

WILLIAM MONTGOMERY.

Craigville, Orange Co., N. Y. July 22.

New Iron Manufactory.

On the 19th ult. the large iron establishment of Mr. William Bushnell went into operation on the bank of the Hudson River, at the old Union Landing, near Poughkeepsie. The Poughkeepsie Journal says the works are very extensive, put up in the most substantial manner, and are calulated to use ten thousand tons of iron ore in a year. The operations are aided by an engine of one hundred and twenty horse power. Authracite coal alone is used, and the same heat that melts the iron drives the engine. But large as the works now are, they are to be much extended as soon as possible by the construction of additional buildings to manufacture the iron into bars, &c. A large number of hands will be constantly employed, and such an establishment cannot fail to be of great and permanent benefit to the village.

Kyanizing.

We learn from the Kennebec Journal that this process of preparing timber to preserve it from decay is carried on to considerable extent in that quarter. A building 200 feet long has been erected for the purpose, where the timber is placed in enormous boilres, 50 feet long and 5 or 6 feet in diameter where steam is applied to it from another boiler, which is then condensed, thus producing a vacuum and opening the pores of the wood; after which a solution of coal tar is let into the boilers and a great force applied to it by means of a force pump, and after six or eight hours the timber is drawn out. Timber thus prepared is used for railroad sleepers, and it is said will withstand rot and the worms a long time.

Unprecedented Demand for Old Papers.

At the commencement of the present volume of the Scientific American we had nearly one thousand complete setts of the preceding volume on hand. Since that time we have had 500 copies of those setts bound, and the balance have been ordered by mail and sent in sheets. We are now obliged to inform our patrons that we are unable any longer to furnish *complete* setts in sheets, and that we have but fifty more copies left, which are bound. The price of the remaining fifty copies which are left will be hereafter $3 per copy (neatly bound,) or we can furnish a few more copies in sheets, minus Nos. 1, 10, 16, 17 and 46, at $2 per sett. All the numbers of the third volume can be had yet, at the subscription price.

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Arts, Manufactures and Machinery.

Copying by Casting.

The Art of Casting, by pouring substances in a fluid state into a mould which retains them until they become solid, is essentially an Art of Copying. It also happens that the thing produced resembles entirely, as to shape, the pattern from which it was formed.

In casting iron and other metals patterns made from drawings are the originals from which the moulds for Casting are made, so that, in fact, the Casting itself is the Copy of the mould, and the mould is the Copy of the wooden pattern. In castings of iron and for the coarser purposes, and, if they are afterwards to be worked, even for the finer machines, the exact resemblance amongst the things produced which takes place in many of the Arts to which we have alluded, does not happen, nor is this necessary. As the metals shrink in cooling, the pattern is made larger than the intended copy; and in extricating it from the sand in which it is moulded, some little difference will occur in the size ot the cavity which it leaves.

In smaller work, where accuracy is more requisite, and where few or no after-operations are to be performed, a mould of metal is employed which has been formed with considerable care. Thus, in casting bullets, which ought to be perfectly spherical and smooth, an iron instrument is used in which a cavity has been cut and ground with considerable care; and in order to obviate the evil which would otherwise result from the contraction in cooling, a jet is left which may supply the deficiency arising from that cause, and which is afterwards cut off. The leaden toys for children are cast in brass moulds which open, and which have been graved into the figures designed.

Casting with plaster is a mode of Copying applied to a variety of purposes;—to produce accurate representations of the human form, —of statues,—or of rare fossils,—to which latter purpose it has lately been applied with great advantage.

In all casting, the first process is to make the mould, and plaster is the substance which is almost always employed in the cases now under consideration. The property which it possesses of remaining for a short time in a state of fluidity, renders it admirably adapted to this purpose, and adhesion is effectually prevented by oiling the surface on which it is poured. The mould formed round the original, removed in separate pieces and then reunited, is that in which the Copy is cast.

Casting in wax is a mode of Copying, which if aided by proper colouring, offers the most successful imitations of many objects of Natural History, and gives an air of reality to them which might deceive even the most instructed. Numerous figures of remarkable persons, having the face and hands formed in wax, have been exhibited at various times, and the resemblances have in some instances been most striking. But whoever would see the Art of Copying in wax carried to the highest perfection, should examine the beautiful collection of fruit at the House of the Horticultural Society, London; the model of the magnificent flower of the plant which forms the new genus Rafflesia; or the waxen models of the interials ot the human body which adorn the Anatomical Gallery of the Jardin des Plantes, and the Museum at Florence.

The Art of imitation by wax does not usually afford the multitude of Copies which flow from many similar operations. This number is checked by the subsequent stages of the process, which, ceasing to have the character of Copying by a tool or pattern, consequently become more expensive Form alone is given by Casting; the colouring must be the work of the pencil, guided by the artist in each individual production.

Ancient Miners of America.

Mr Knapp, of the Vulcan Mining Company of Lake Superior has lately made some very singular discoveries in working one of the veins, which he lately found He worked into an old cave which had been excavated centuries ago. This led them to look for other works of the same sort, and they have found a number of sinks in the earth which they have traced a long distance. By digging into those sinks they find them to have been made by the hand of man. It appears that the ancient miners went on a different prinpciple from what they do at the present time. The greatest depth yet found in these holes is thirty feet—after getting down to a certain depth, they drifted along the vein, making an open cut. These cuts have been filled nearly to a level by the accumulation of soil, and we find trees of the largest growth standing in this gutter; and also find that trees of a very large growth have grown up and died, and decayed many years since: in the same places there are now standing trees ot over three hundred years' growth. Last week they dug down into a new place, and about twelve feet below the surface found a mass of copper that will weigh from eight to ten tons. This mass was buried in ashes, and it appears they could not handle it, and had no means of cutting it, and probably built fire to melt or separate the rock from it, which might be done by heating, and then dashing on cold water. This piece of copper is as pure and clean as a new cent, the upper surface has been pounded clear and smooth. It appears that this mass of copper was taken from the bottom of a shaft, at the depth of about thirty feet. In sinking this shaft from where the mass now lies, they followed the course of the vein, which pitches oonsiderably; this enabled them to raise it as far as the hole came up with a slant. At the bottom of the shaft they found skids of black oak, from eight to twelve inches in diameter—these sticks were charred through as if burnt, they found large wooden wedges in the same situation. In this shaft they found a miner's gad and a narrow chisel made of copper. They have taken out more than a ton of cobble-stones, which have been used as mallets. These stones were nearly round with a score cut around the center, and look as if this score was cut for the purpose of putting a withe round for a handle. The Chippewa Indians all say that this work was never done by Indians. This discovery will lead to a new method ot finding veins in this country, and may be of great benefit to some. We suppose they will keep finding new wonders for some time yet, as it is but a short time since they first found the old mine. There is copper in abundance, and Knapp has found considerable silver during the past winter.

Here is evidence of a civilized race inhabiting this country when the land of our forefathers was nothing but a wild and bleak Island inhabited by our painted progenitors. Oh that printing had been known in the days of old. Well has the press been compared to a planet in our system.

The Influence of Rhythm.

The finer melodies of language will always be found in those compositions which deal with many considerations at once,—some principal, some subordinate, some exceptional, some gradational, some oppugnant; and deal with them compositely, by blending whilst they distinguish. And so much am I persuaded of the connection between true intellectual harmony of language and this kind of composition, that I would rather seek for it in an act of parliament—if any arduous matter of legislation be in hand—than in the productions of our popular writers, however lively and forcible. An act of parliament, in such subject matter, is studiously written, and expects to be diligently read, and it generally comprises compositions of the multiplex character which has been described. It is a kind of writing, therefore, to which some species of rhythmical movement is indispensable, as any one will find who attempts to draft a difficult and comprehensive enactment, with the omission of all the words which speak to the ear only, and are superfluous to the sense. Let me not be misunderstood as presuming to find fault generally and indiscriminately with our modern manner of writing. It may be adapted to its age and its purposes; which purposes, as bearing directly upon living multitudes, have a vastness and momentuousness of their own. All that it concerns me to aver is, that the purpose which it will not answer is that of training the ear of a poet to rhythmical melodies. And how little it lends itself to any high order of poetical purposes, may be judged by the dreary results of every attempt which is made to apply it to purposes of a cognate character—to prayers, for example, and spiritual exercises. Compare our modern compositions of this kind with the liturgy—a language which, though for the most part short and ejaculatory and not demanding to be rhythmic in order to be understood, partakes, nevertheless, in the highest degree, of the musical expressiveness which pervaded the compositions of the time. Listen to it in all its varieties of strain and cadence, sudden or sustained —now holding on in assured strength, now sinking in a soft contrition, anon soaring in the joyfullness of faith—confession, absolution, exultation, each to its appropriate music, and these again contrasted with the steady statements of the doxologies. Let us listen, I say, to this language, which is one effusion of celestial harmonies, and compare with it the flat and uninspired tones and flagging movements of those compounds of petition and exhortation (from their length and multifariousness peculiarly demanding rhythmic support), which are to be found in modern collections of prayers for the use of families. I think the comparison will constrain us to acknowledge that short sentences in long succession, however clear in construction and correct in grammar, if they have no rhythmic impulse—though they may very well deliver themselves of what the writer thinks and means—will fail to bear in upon the mind any adequate impression of what he feels—his hopes and fears, his joy, his gratitude, his compunction, his anguish, and tribulation; or, indeed, any assurance that he had not merely framed a document of piety, in which he had carefully set down whatever was most proper to be said on the mornings and evenings of each day. These compositions have been, by an illustrious soldier, designated "fancy prayers," and this epithet may be suitable to them in so far as they make no account of authority and prescription; but neither to the fancy nor to the imagination do they appeal through any utterance which can charm the ear.—*Henry Taylor.*

Petrifaction Ponds.

The following is a description of the petrifaction ponds at Shirameen, (a village near the lake of Ourmia in Persia,) which produce the transparent stone known by the name of Tabriz Marble.—This natural curiosity consists of certain extraordinary pools or plashes, whose indolent waters, by a slow and regular process, stagnate, concrete, and petrify, and produce that beautiful transparent stone, commonly called Tabriz Marble, which is so remarkable in most of the burial places in Persia, and which forms a chief ornament in all buildings of note throughout the country. These ponds, which are situated close to one another, are contained in the circumference of about half a mile, and their position is marked by confused heaps and mounds of the stone, which have accumulated as the excavations have increased. On approaching the spot, the ground has a hollow sound, with a particularly dreary and calcined appearance, and when upon it, a strong mineral smell arises from the ponds. The process of petrifaction is to be traced from its first beginning to its termination. In one part, the water is clear; in another, it appears thicker and stagnant; in a third, quite black; and in its last stage, it is white, like a hoarfrost. Indeed, a petrified pond looks like frozen water, and, before the operation is quite finished, a stone slightly thrown upon it breaks the outer coating, and causes the black water underneath to exude. Where the operation is complete, a stone makes no impression, and a man may walk on it without wetting his shoes.

Wherever the petrifaction has been hewn into, the curious progress of the concretion is clearly seen, and shows itself like sheets of rough paper placed one over the other in accumulated layers. Such is the constant tendency of this water to become stone, that where it exudes from the ground in bubbles, the petrifaction assumes a globular shape, as if the bubbles of a spring, by a stroke of magic, had been arrested in their play, and metamorphosed into marble.

The substance thus produced is brittle transparent, and sometimes most richly streaked with green, red, and copper-coloured veins. It admits of being cut into immense slabs, and takes a good polish. The present royal family of Persia, whose princes do not expend large sums in the construction of public buildings, have not carried away much of the stone; but some immense slabs which were cut by Nadir Shah, and now lie neglected among innumerable fragments, show the objects which he had in view. So much is this stone looked upon as an article of luxury, that none but the king, his sons, and persons privileged by special firmen, are permitted to excavate; and such is the ascendancy ot pride over avarice, that the scheme of farming it to the highest bidder, does not seem to have ever come within the calculations of its present possessor.

Coal.

Mineral coal dug from the earth is organized carbon buried in ancient reeds and forests by the sinking down of the crust of the planet at particular points, and the washing in of earthly sediments above the submerged forest, to be consolidated into stratified or sedimentary rocks. The prodigious force of volcanic power, acting from below, upheaves all these strata, their cracks and wide fissures are washed into valleys by the ceaseless action of rain, frost, electricity, light, heat, and other meteoric influences; and thus they wear down solid rocks to coal beds, and often far below them.

Carbon is the *coal* which may be obtained alike from wood, straw, grain, flesh, and almost, if not quite every truly organized product of life. There is carbon enough in the carbonic acid which is chemically combined with lime in limestone rock, to cover the whole globe with a pure diamond 500 feet in thickness. While an immense quantity of carbonic acid is discharged into the atmosphere from volcanoes and internal heat, acting like fire on limestone in a burning kiln, by which 100 lbs. of rock lose 44 lbs. of gas; yet old ocean keeps up nature's great balance, by absorbing an equal quantity of carbonic acid gas to combine with the store of the earthy minerals below.

Brazil.

In the Empire of Brazil in which abounds the finest Iron Ore, there is not a single smelting furnace, notwithstanding the very considerable incursion that French and English Capitalists have made there. There are several foundries for the manufacture of machinery, but the iron for that purpose is wholly imported. Some enterprising American capitalists and mechanics of this city contemplate establishing an extensive smelting furnace in the Brazilian province of Rio Grande near the river of that name, during the coming year. This will be the first enterprise of the kind in South America, and while it will unquestionably prove immensely profitable, will be one more evidence of Yankee go-ahead-ativeness. Americans were the first to introduce steamers to the navigation of Central American rivers, they will soon build them by the aid of native furnaces and foundries, within sight of the Patagonian huts of South America.

Danger of a Cent.

On the 17th day of September, 1847, a lad 7 years of age, son of Mr. Theodore P. Bowker of Boston, accidentally swallowed a copper cent, which lodged at the entrance of his stomach. Medical aid was immediately called, and although the physicians could distinctly feel it with their instruments, all efforts to extricate it were unavailing. The lad suffered great inconvenience in consequence of its remaining where it first lodged, and has frequently abstained from eating his regular meals, such was the distress occasioned by food coming in contact with the piece of copper. Thus the matter continued until the evening of the 17th inst. a period of ten months, when he was suddenly seized with a violent vomiting, and among other matter, threw up the aforesaid cent, which was covered with a thin firm scaly substance.—The little fellow is now as healthy as ever, and feels greatly relieved at having disgorged the indigestible coin

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TO CORRESPONDENTS.

"C. H of N. Y."—Your invention will produce no gain, but much *loss* of power. The most advantageous way in which water power can be used is its direct application to a wheel. Steam, having a far more elastic property than cold water, is usually confined by an engine something like yours; but it is at a great loss of power.

" A. J. G. of N Y."—The Scientific Mechanic has long since ceased to exist.

" E. C. of Mass."—The Encyclopedia of Chemistry now publishing in numbers by Cary & Hart of Philadelphia, and to be had at Hotchkiss & Co.'s Publication Store, in your place, contains the methods and theory of making white lead.

" J. H C. of Ohio."—We know of no person at present who would join you; from what you write, we think you have hit upon something which will prove valuable.

" S. of Penn."—Claims have been made of the same form as yours and for that no patent could be secured, but for the steel surfaces we are not aware of any patent granted, or the same thing having been known before. The patent fee, without which no applicatian can be noticed at the Patent Office, is $30.

" W. T. J. of Me."—We do not know of any electro-magnetic battery, constructed like yours. We consider that you have made a beautiful and useful improvement.

A correspondent writes us and signs himself "Orange County," wishing to know if a pool from 20 to 30 feet deep can be emptied by a tube with a curve leading down a declivity. We answer that it can, and any work on Natural Philosophy will explain the subject. The principles of the syphon is old but the interrogations of " Orange County," warn us not to forget to teach the old as well the new. In fact there is no such thing as " old philosophic truths;" they are ever fresh and ever young, to all generations.

"M. W. of Me "—We again repeat what we have often before said that we cannot weary ourselves to give advice *gratis* to those who are not our Patrons. We wish all to remember this, and to tell their neighbors of it too

"E. H. of Boston."—We do not know of a single manufactory of Plate Glass in our country. We hope to see this branch of the arts established soon in America. The materials are abundant.

"I. P. H. of Maine."—We do not know of any hydralic ram exactly like the one in your sketch, but there are plenty of good rams to be bought in this city.

"O. B. of Ohio." "R. S. I. of Mass.," and N. B. L. of La."—Your volumes of Scientific American have been sent by Express, and we hope they will reach you safely.

"A. C. B. of N. C "—We shipped that parcel of Gutta Percha, by the packet ship Isabella, which sailed for your port last Saturday.

" E. H B. of Mass."—Write to the Commissioner of Patents. Many patents have been granted, that have been applied for since you have made application.

Encyclopedia of Chemistry.

We have received from the publishers Messrs. Cary and Hart, of Philadelphia, the first eleven numbers of their splendid work with the above title. This work is published in monthly numbers at 25 cents each, a price which can be paid by every man who has constant labor, and every man who has any desire at all of acquiring a knowledge of the beauties and benefits of chemistry, should not be without this work. It is edited by J. C. Booth and C. Morfitt of Philadelphia, gentlemen well known as authors and as practical and analytic chemists. Every number as it comes out, is wrote up to the very moment it goes to press and contains every thing that is new. It is certainly a valuable work.

Ranlett's Architect.

We have received Number 3 of this valuable publication, and most heartily recommend it to our architects and carpenters, and to all who have a taste for that Science. It is published by Wm. Graham, Tribune Buildings, N. Y. Each number is illustrated with two or more beautiful designs, with working plans and full specifications, price, &c.

Patent Agency.

Applications for Patents made at this office, on the most reasonable terms. Neat drawings, specifications, and engravings of the first character, and cheaper than anywhere else. Notices of new inventions, Agency for the sale of Patent Rights, and all business of that nature, promptly attended to. Those who have patent rights to dispose of will find a good opportunity and field for their sale—such as Horse Power Machines and Waterwheels of every description. The largest circulation in the world for advertisements of inventions, &c.

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THE Subscriber has constantly for sale by the cargo or ton all sizes of Coal for Manufacturers and Families, from the best Schuylkill and Lehigh mines. Hazleton and Spring Mountain, lump and steamboat Coal. Tamaqua Chesnut for engines.—Peach Orchard and other red ash Coal. Midlothian, Virginia, a superior article for smith's use. Cumberland, Sidney and Liverpool Coal. For sale at the lowest market prices. J. P. OSTROM,
au5 3m* corner 10th Avenue and 26th st.

To Manufacturers.

THE Subscriber has just arrived from England, and is desirous of obtaining a situation in a cotton manufactory to superintend either spinning, doubling or warping operations. He is practically acquainted with spinning and doubling in their various branches, and with fancy and plain warping, and has not only superintended spinning operations, &c. but has manufactured himself. He has recommendations from most influential and respectable persons in England, both as it respects character and qualifications, and will be happy to fill any situation relative to the above manufacturing operations. The most satisfactory evidence will be given to manufacturers who are desirous of obtaining an agent or superintendent. Address " Atkinson," Paterson, New Jersey. au5 2t*

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THE Subscriber continues to manufacture his Premium Letter Presses, at Worcester, Mass., and respectfully informs his friends and the trade generally, that he keeps constantly on hand a large assortment, which he offers for sale at reduced prices. Orders by mail will be promptly attended to

GEO. C. TAFT,
Worcester, Mass., April 11, 1848. au5 tf

TO MACHINISTS AND BUSINESS MEN.

THE advertiser wants a person to join him in experimenting and bringing out some important improvements in the Power Loom, which he believes he can make and for the capital invested would make a reasonable allowance of the right of the same. All communications must be post paid, to W H. J., Machinist, Lawrence City, Mass. jy22 3t*

Judson's Stave Dressing Machine.

THIS Machine, on which Letters Patent were granted May 1st, 1847, has been in successful operation for the past year, and hundreds of thousands of staves have been dressed by it. It is warranted to dress the same quantity of staves with as little power as any that can be started, also leave the full thickness on thin edges and thin ends, and conform as near to the crooks and twists of the timber as can be desired. The jointing of the machine which accompanies it, has been subjected to the severest test, and pronounced superior to that performed by hand. Application for a patent on the Jointer has been made.

Large quantities of Hogsheads and Shooks made with staves dressed and jointed with their machines have been sold and used to the entire satisfaction of the purchasers.

For rights and machines address the proprietors st their Manufactory, Artizan street, New Haven, Connecticut, where machines in full operation may be seen. JUDSON & PARDEE.
New Haven, July 17, 1748. jy29 3m*

U. S. School Agency.

THIS enterprise is designed to promote the interests of Literary Institutions, by furnishing Teachers, Pupils, Books, &c.

The register exhibits the names of hundreds in the profession who have high testimonials from respectable Institutions where they have officiated in various capacities as Principals, Professors, or Teachers, both in this country and in Europe Perhaps no undertaking was ever commenced under more favorable auspices, and with better prospects of eminent usefulness. It is now known from Maine to Florida, and has induced an extensive correspondence, affording pleasing evidence that it is fast gaining the confidence and patronage of the Literary Institutions of this country. The satisfaction expressed by our numerous respectable patrons affords high encouragement, for in their opinion it must succeed and take an important place among the best enterprises of the age. We respectfully solicit the Circular of every Literary Institution in the Union for gratuitous distribution, also all communications adapted to promote the cause of education. All communications should be post paid.

E. H. WILCOX, Proprietor,
jy22 3t 124 Nassau st., N. Y.

To Cotton Manufacturers.

THE Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and better work with a less expenditure of power than any other Willow; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. It is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operatin the machine in any peculiar or difficult situation. EDMUND BACON,
Superintendent Quinebaug Manufacturing Co.
j24 tf Norwich, Conn.

To Manufacturers of Cotton.

THE Subscriber, having had some 35 years experience in the manufacture of Cotton Goods, together with building machinery of various kinds, has completed by drawings and specifications, five improvements, (for which he is taking measures to obtain letters patent,) which will reduce the cost of manutacture, in labor and tools used in the art, so that more and better goods can be produced in 10 hours, than has yet been accomplished in the longest day that any one set of hands ever labored. He feels confident of receiving the gratitude of all the lady weavers, who may have the opportunity of working his warp yarn.

He is now ready to commence the superintendence of a mill, anywhere North of Mason & Dixon's line; and would allow any company, who will try his plans, all the profits of one year in the market. WM. HOWARD, Jr.
jy29 2t* 238 Eddy st. Providence, R. I.

Patent Agency.

THE undersigned having established permanent agencies in England, Ireland, Scotland, France and Belgium (with the leading manufacturers and inventors of which countries he is personally acquainted), is enabled to transact all business entrusted to his care with perfect safety and dispatch; and such is the integrity, energy and legal ability of our agents, that the patentee is, in ninety-nine cases out of a hundred, sure to reap a rich harvest from any invention which passes through our hands.

Since the first of March last we have sold three patents in Great Britain for $17,580, and five in France for 38,000 francs.

For integrity, the undersigned refers to:—Horace Greeley, Esq. Tribune Buildings, New York.

CLINTON G. GILROY,
All letters must be post paid, and addressed to Clinton G. Gilroy, 71 Nassau st. New York. jy1 3m*

Ballard's Improved Jack Screw.

PATENTED.

THE advantages of this Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires,

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,

Of various sizes, power and price, constantly on hand at the manufactory,

No. 7 Eldridge street, near Division.
m20 tf

STEAM BOILER.

BENTLEY'S Patent Tubular and other Boilers of any size, shape or power, made to order, by
SAMUEL C. HILLS & CO.
m8 43 Fulton st.

Agricultural Implements.

☞ Inventors and Manufacturers of superior Agricultural Impiements may find customers for their goods by applying at the Agricultural Warehouse of S. C. HILLS & CO. 43 Fulton st. m8

Lap welded Wrought Iron Tubes

FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

THE Subscriber having received Letter Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eight h more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

GENERAL PATENT AGENCY.

REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 189 Water to 43 Fulton street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.

m8 SAMUEL C. HILLS, Patent Agent.

Johnson & Robbins,

Consulting Engineers and Counsellors for Patentees.

Office on F street, opposite Patent Office, Washington, D.C. j17 tf

☞ The above is prepared to execute all orders at the shortest notice and on the most reasonable terms.

To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information cencerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

Machinery.

PERSONS residing in any part of the United States who are in want of Machines Engines, Lathes, or any description of machinery, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long experience in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care MUNN & CO. a15

LAW'S

STAVE DRESSER AND JOINTER.

THE undersigned has perfected and put into very successful operation his Stave Machine.

It will **Dress** and **Joint** Staves of all shapes, kinds and dimensions, and of promiscuous widths, as they come from a mixed pile, at the rate of from 6 to 8 staves per minute, finishing them, before they leave the machine, ready for the truss hoop. They are both dressed and jointed very smoothly and handsomely, bringing each stave of equal width at the two ends without waste of stock and perfectly to correspond with very twist or crook, and with as little power in proportion to the work done, as any other machine.

For rights (which are indisputable,) or machines, address, post paid.

H. LAW, Wilmington, N. C.

N. B A machine will be in operation in New York or vicinity, in the course of the ensuing month. jy15 2m

Stave Dressing Machine.

THE undersigned are manufacturing and have now in operation, a machine for **Dressing Rived Staves,** which will dress 126 hogshead or 170 barrel staves per hour, with one horse power, and with two horses will double the number

It will dress crooked and winding staves to perfection, and leave the full thickness on those with thin edge, a desideratum worthy of attention.

The machine is simple, compact and durable, and has received the approval of every practical Cooper that has witnessed its operations. We warrant it to perform fully equal to our representation and shall be pleased to exhibit it to all who may favor us with a call. For further description and terms, apply to

WM. & E. T. FITCH, 2d., New Haven, Conn., or
GEO. GILBERT, Westville, N. H. Co., Conn.
j3 3m*

TALBOT'S PATENT REVOLVING BLIND HINGE.

Important to Builders and others.

THESE Hinges are for opening, closing, locking and completely regulating the blind upon the interior of the house without raising the sash. They are adapted to any kind of house, or style of finish. All communications, whether for the purchase of the article, or of Town, County or State rights, addressed to the subscriber, or to J. W Ingell & Co., Taunton, Mass., will be promptly and satisfactorily attended to.

j3 tf L T. TALBOT, Taunton, Mass.

PREMIUM SLIDE LATHE.

THE subscriber is constantly building his improved Lathes of all sizes, from 7 to 30 feet long, and can execute orders at short notice.

JAMES T. PERKINS,
Hudson Machine Shop and Iron Works,
m11 Hudson, N. Y.

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Practical Receipts.

Prepared by a German Chemist for the Scientific American.

New Method to obtain Starch without Fermentation.

The flour is mixed with a sufficient quantity of water to have a consistency somewhat more solid than the dough for making bread. No more should be mixed at once than is necessary for half a day's work. The manufacturer now takes a quantity of the dough, perhaps 10 or 12 lbs. upon an oval wire sieve, which is placed over a barrel or cask, and before or under the faucet of a recipient containing water. Through the perforated head of the faucet a well divided stream of water is permitted to run on to the flour. In the commencement the water is suffered to run only slowly on it, but as soon as the starch commences to separate and the dough assumes a greyish appearance, the latter has to be worked more quickly until nothing but the gluten remains in your hands. If the dough is badly prepared, as full of bran, it will spread all over the sieve and permit nothing to run through. In such a case it is necessary to throw the whole mass again into the water, stir it up, and to bring it anew upon the seive. The water used must be cold of course, and if it is needed only about four times the quantity of the dough to be washed. Two hands can wash a thousand pounds of flour a day and will receive from it 550 pounds of fine starch and 300 lbs. of gluten This latter substance, which was entirely lost in the former process of manufacturing starch, is obtained by the above method in so pure a state that it be usefully applied to many purposes. Mixed with potatoe meal or starch it will produce a superior bread, and mixed with bran a superior article for fattening hogs or beef cattle. In a fresh state gluten is a substitute for yeast. Left standing with water under occasional stirring for 8 or 10 days, it will give a very superior paste for binders or for finishing cotton and linen stuffs. Mixed with the wash water from potatoe starch it will set the latter in fermentation, and decomposing the saccharine matter of it will form alcohol which is gained by distillation.

Observations on Yeast.

Dr. Lieddendorff, desirous to decide the question, whether Yeast is an organized substance, and if so, whether it caused subsequently fermentation as such, made the following experiment :—

He rubbed and triturated upon glass a portion of yeast so perfectly, that he could not detect under the microscope a globular texture. Two parts of grape sugar were then each separately dissolved in ten parts of water. To one solution was added the pulverized yeast, and to the other a corresponding quantity of yeast in its primitive state. Both mixtures were exposed to a temperature of 28° R. The solution containing the unpulverized yeast, commenced to ferment in half an hour and the reaction continued without cessation for two days when all the sugar was decomposed. In the meanwhile the mixture containing the pulverized, and thus disorganized yeast, did not exhibit a single gas bubble.

Chinese Fine Paint Brushes.

The Chinese use for spreading their oil colors, a brush which resembles our crayons or lead pencils They enclose more or less bristles of wild hogs compressed in a wooden handle, and to have a hard or soft brush they chip off more or less of the wood. With these brushes a very intimate connection of the different shades is produced, and to this application the peculiarity of their choice oil paintings may be ascribed, viz. that they appear to be glazed.

The Germs of Peas and Beans.

The Chinese eat the germs of peas and beans when green vegetables commence to be scarce. They produce them in the following manner. These leguminous fruits, in a dried state, are soaked for four hours in a dish containing water and are afterwards covered with straw. The germs or sprouts will reach in two days a length of an inch and a half. They are then freed from the remnants of the seed, and either stewed in beef or mutton broth, or else boiled in water and served up in the shape of a salad.

Brushes made of Quills.

Badin manufactures Brushes in Paris, of Quills, which he splits by a mechanical process into thin strips or slices resembling very much in appearance bleached bristles. Besides the neat appearance of this article it possesses the great advantage over the common hair or whalebone brush, that its single fibres are more dense and solid, while the bristle, which represents a hollow tube, is apt to become dull and soft by continued use, forming a bunch of small hair on the extremity of each.

New Method of making Chloride of Lime

Take some slaked lime and pour some chlorine water upon it. The chlorine of the latter is immediately absorbed by the lime, and you can pour off the supernatant water and replace it by a second quantity of chlorine water so as to saturate thoroughly every particle of lime with chlorine. The preparation is best preserved in a liquid state in well closed vessels.

Manufacture of Sulphuric Acid without Lead Chambers.

M. Schneider has announced that he has discovered a new process to change sulphurous acid, merely through the means of pourous substances, amongst which he finds the most convenient and best adapted to be pumice stone, into sulphuric acid of 60° B. gravity. He is convinced that this method can be applied to the wholesale manufactory, and that it will offer great advantages as far as cost and labor are concerned, over the formerly used process.

Hints for Pianists.

Have your piano forte tuned at least four times a year by an experienced tuner : if you allow it to go too long without tuning, it usually becomes flat, and troubles the tuner to get it to stay at the concert pitch, especially in the country. Never place the instrument against an outside wall or in a cold or damp room, particularly in a country house ; there is no greater enemy to a piano-forte than damp. Close the instrument immediately after your practice ; by leaving it open dust fixes on the sound board, and corrodes the movements, and if in a damp room, the strings soon rust. Should the piano-forte stand near or opposite to a window, guard, if possible, against its being opened, especially on a wet or damp day ; when the sun is on the window draw the blind down. Avoid putting metalic or other articles on or in the piano-forte ; such things frequently cause unpleasant vibrations, and someimes injure the instrument.

Houses of Unburnt Bricks.

Houses of unburnt bricks may be made perfectly wind and water proof by being covered externally with a thin coat of mastic which is prepared by mixing very coarse sharp sand, or sifted road drift, with dry White Lead and Litharge, beaten up with Linseed oil, and rendered sufficiently soft to work well with a towel. This plastering becomes in a short time so hard as to resist a nail, and will stand for an age without cracking or needing repair. For inside plastering sharp sand and lime mortar is sufficient ; papering the walls when dry.

To make a Looking-glass appear Broken.

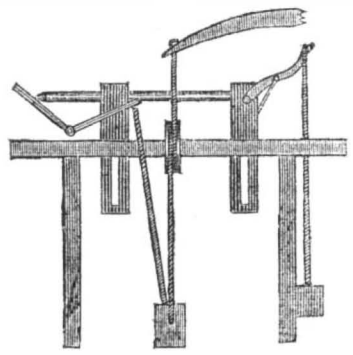
Take piece of soap and draw a curved stroke on the glass from top to bottom, and it will look exactly as if the glass was shivered. Many a tricky youngster has plagued his careful maiden aunt with a piece of soap rubbed over an old favorite looking-glass.

Spirit of Lavender.

Take of fresh lavender 2 pounds ; alcohol a gallon, water 2 pints. Mix them, and with a slow fire distil a gallon and a beautiful spirit of lavender is the result.

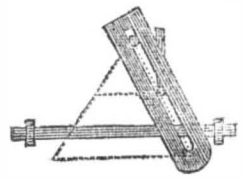
MECHANICAL MOVEMENTS.

Grandjean's Screw-Cutter.



This is a machine which was proposed and used in France during the last century, invented by a gentleman named M Grandjean, for cutting screws. The piece of iron to be cut was traversed by means of the bent lever on the left which was acted on by the treadle which gives the rotary motion by the cord round the pulley. Those who would cut the head off all improvements as infringements upon old principles, have just to compare the above with modern machinery for cutting screws.

Drawing Rule.



Suppose the upper pin in the slot represented in the board part of the diagram stationary and the lower extremity of the piece moved in an horizontical direction, as shewn by the lower doted line, the second stud in the slot will also be moved in a straight line, guided by its connexion with that part of the apparatus seen behind, and the length or amount of traverse of the second point may be varied by altering its elevation.

Photographic Paper.

The art of Photography has been known for some time, and a peculiar preparation of paper named the Talbotype was somewhat well known in Paris and Germany, yet as the full particulars of the preparation was never publicly developed, our Patent Office granted a patent last year for the invention a : full account of which will be found in the report of Examiner Page, for last year.

The first part of the invention relates to the making of paper extremely sensitive to the rays of light, and for this purpose the best writing paper with the smoothest surface is selected.

PREPARATION OF PAPER.

One hundred grains of the nitrate of silver is dissolved in six ounces of distilled water, and with this, one side of the paper is washed with a soft camel hair brush. That side of the paper is marked to know it again and set to dry spontaneously in a dark place, after being dried, the paper is next dipped in a solution of the iodine of potassium, containing 500 grains of that salt dissolved in one pint of water. Only one or two minutes is allowed for the paper to be in this solution, when it is taken out, dipped in water, lightly pressed between clean blotting paper, and left to dry in the atmosphere. This is called iodized paper, and when well made, is insensible to the action of lights, and will then keep for many years

SECOND PREPARATION OF PAPER.

This part should be deferred till the paper is wanted for use when it should be washed with the following prepared liquid :—

Dissolve one hundred grains of crystallized nitrate of silver in two ounces of distilled water. To this solution add one sixth of its volume of strong acetic acid ; let this mixture be called A. ; dissolve crystallized gallic acid in distilled water, as much as it will dissolve (which is a very small quantity;) let this solution be called B. When you wish to prepare a sheet of paper for use, mix together the liquids A. and B. in equal volumes. This mixture is called by the name of gallo-nitrate of silver. Let no more be mixed than is intended to be used at one time, because the mixture will not keep good for a long period. Than take a sheet of iodized paper and wash it over with this gallo-nitrate of silver with a soft camels hair brush, taking care to wash it on the side which has been previously marked. This operation should be performed by candle light, let the paper rest half a minute and then dry it lightly with bloting paper. When nearly or quite dry, the paper is fit for use : but it is advisable to use it within a short time after its preparation.

The paper thus prepared, is called talbotype, it is placed in a camera obscura, so to receive the image formed in the focus of the lens. Of course, the paper must be screened or defended from the light during the time it is being put into the camera ; when the camera is properly pointed at the object this screen is withdrawn, or a pair of internal folding doors are opened, so as to expose the paper for the reception of the image. If the object is very bright or the time employed sufficiently long, a sensible image is perceived upon the paper, when it is withdrawn from the camera. But when the time is short or the objects dim, no image whatever is visible upon the paper which appears entirely blank Nevertheless, it is impressed with an invisible image, and the means of causing the image to become visible is performed as follows:—

Take some gallo-nitrate of silver, prepared in the manner before directed, and with this liquid wash the paper all over with a soft camel's hair brush, then hold it before a gentle fire, and in a short time, varying from a few seconds to a minute or two, the image begins to appear upon the paper. Those parts of the paper upon which light has acted the most strongly, become brown or black while those parts on which light has not acted, remain white. The image continues to strengthen and grow more and more visible during some time ; when it appears strong enough, the operation should be terminated, and the picture fixed.

(*Conclusion next week.*)

Visible and Invisible.

Write with French chalk on a looking-glass ; wipe it with a handerchief, and the lines will disapear ; breathe on it, and they will reappear. This alteration will take place for a great number of times, and after the lapse of a considerable period.

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